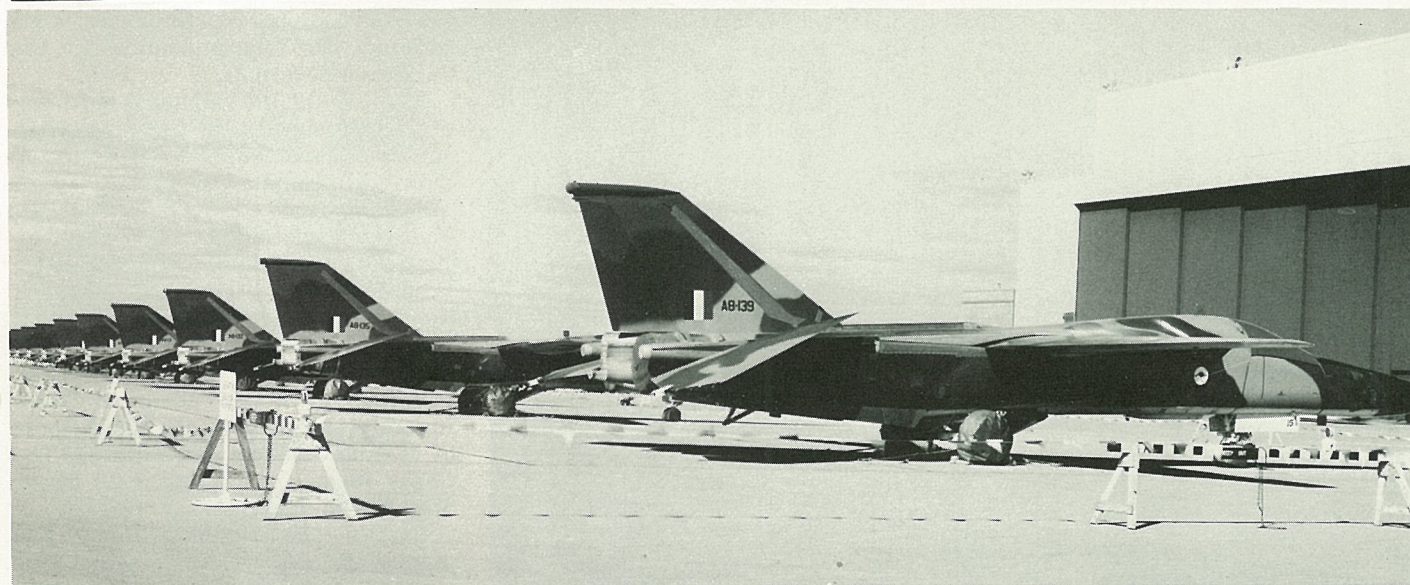


General Dynamics World

Vol. 2, No. 1

GENERAL DYNAMICS CORPORATION — SAN DIEGO

January 10, 1972



DECISION MADE — Australian government has agreed to purchase 24 F-111C aircraft, shown above on ramp at Fort Worth operation. Delivery will start in March 1973, following a modernization-refurbishment program.

Australia to Buy 24 F-111Cs for RAAF

The Australian government has agreed to purchase 24 F-111C aircraft for the Royal Australian Air Force.

Australia's David Fairbairn, Minister for Defence, and Senator Darke-Brockman, Minister for Air, announced the agreement and said their government had agreed to a modification and refurbishment program to bring the aircraft to RAAF standards.

The modernization - refurbishment program will begin April 1, 1972. Delivery of the F-111C aircraft is scheduled to start in March of 1973 and continue through Nov. 1, 1973.

Modification and refurbishment of the F-111Cs will be done at Convair Aerospace Division's Fort Worth operation.

The F-111C fleet will be fitted with

the new design, low-stress wing carry-through structure that has been successfully fatigue-tested to 24,000 hours and incorporated in the F-111F model. A number of modifications made on Air Force F-111 aircraft since 1968 will also be included in the F-111C fleet.

RAAF planning calls for the aircraft to be based at Amberley, which is about 30 miles west of Brisbane.

"We're very pleased that the Australian government has decided to introduce the F-111C into the RAAF," said A. S. (Doc) Witchell, F-111A/C/D/F program director.

"This fine airplane will substantially improve the RAAF's capability to meet its very demanding long-range defense requirements."

Each F-111C will be in the modification line for from 10 to 12 months, the Australians announced. And each of the aircraft will be cold proof-tested before being ferried to Australia.

Australian officials said the F-111C aircraft "will provide the RAAF with an all-weather, long-range strike aircraft with an established and highly effective terrain-following capability. It is able to carry out low-level, high-speed penetration of enemy target systems by day or night and to deliver its bomb load with exceptional accuracy."

Employees Must File For Tax Allowance

Employees of General Dynamics are reminded that important changes in the federal income tax withholding system have been made.

The Revenue Act of 1971 includes a provision for a "special withholding allowance" that is treated as an exemption for withholding purposes.

Single persons and those married whose spouses are not employed are entitled to one "special exemption." However, the allowance may not be claimed by either husband or wife when both are employed.

Wage earners with families should adjust their income tax withholding exemption certificate (W-4 Form) to claim the exact number of personal exemptions to which they are entitled including the "special exemption." Otherwise, the tax withheld will be more than necessary, needlessly reducing take-home pay.

Division and subsidiary payroll departments can provide further information.

Quincy Shipbuilders To Christen Second 'Lykes' Ship Saturday

Almeria Lykes, second of the three Seabee barge carriers under construction at Quincy Shipbuilding Division, will be christened Saturday, Jan. 15, at 11 a.m.

Mrs. Frank A. Nemec, wife of the president of Lykes Bros. Steamship Co., Inc., will become the ship's sponsor by smashing the ceremonial bottle of champagne across the bow.

Principal speaker at the christening will be Adm. Charles K. Duncan, Commander-in-Chief, Atlantic Fleet.

The three Seabees, *Doctor Lykes*, *Almeria Lykes* and *Tillie Lykes*, are the largest dry cargo ships in the world.

Guided Missile Frigate 'Dale' Commissioned Into Fleet After Undergoing Modernization

USS Dale (DLG-19) began the final phase of its modernization program on Jan. 3. Upon completion of the modernization, *Dale* will be assigned to Cruiser Destroyer Force, U.S. Atlantic Fleet, and will be homeported in Newport, R. I.

Commissioning ceremonies for the guided missile frigate were conducted last month at Bath, Maine, with RAdm. Robert R. Crutchfield, Commanding Officer, U.S. Naval Base, Newport, R. I., as principal speaker.

Pomona operation was represented at the commissioning exercises by Dr. L. F. Buchanan, vice president-research and engineering; C. L. McCabe, director of logistic support and ship systems; and C. T. Pearson, project manager of DLG modernization program.

General Dynamics is specialized systems test conductor for the program in which *Dale* is the eleventh in a series of guided missile frigates to be modernized. The program to enhance the anti-air warfare capability of the ships is directed towards increased flexibility in combat systems.

Ralph C. Fratta and Richard H. Benbow are the Pomona operation representatives on the specialized systems test team for *Dale*.

USS Luce (DLG-7) and *USS England* (DLG-22) completed final phase of the modernization program recently. Pomona representatives on *Luce* were C. W. Johnson, A. J. Smith and Benbow. Specialized systems test team Pomona representatives on *England* were I. J. Schab and Clifford Endresen.

Atlas-Centaur Vehicle Launches Intelsat IV Satellite into Orbit

Convair Aerospace Division's Atlas-Centaur 26 launch vehicle performed with perfection Dec. 19 in launching the second Intelsat IV commercial communications satellite for the 79-nation International Telecommunications Satellite Consortium.

Jerry Lucas, Centaur program office engineer for the AC-26, said representatives of NASA and the COMSAT Corp., which manages the Intelsat launches, were pleased with precision of the Atlas-Centaur.

W. J. Hammond, test planning and control group engineer for Convair-SD launch vehicle programs, said the division's preliminary guidance measurements indicated the Atlas-Centaur placed the satellite into an orbit with an apogee of 19,388.3 nautical miles (only 6/10-mile above targeted altitude) and with a perigee of 295.8 nautical miles (the exact distance targeted).

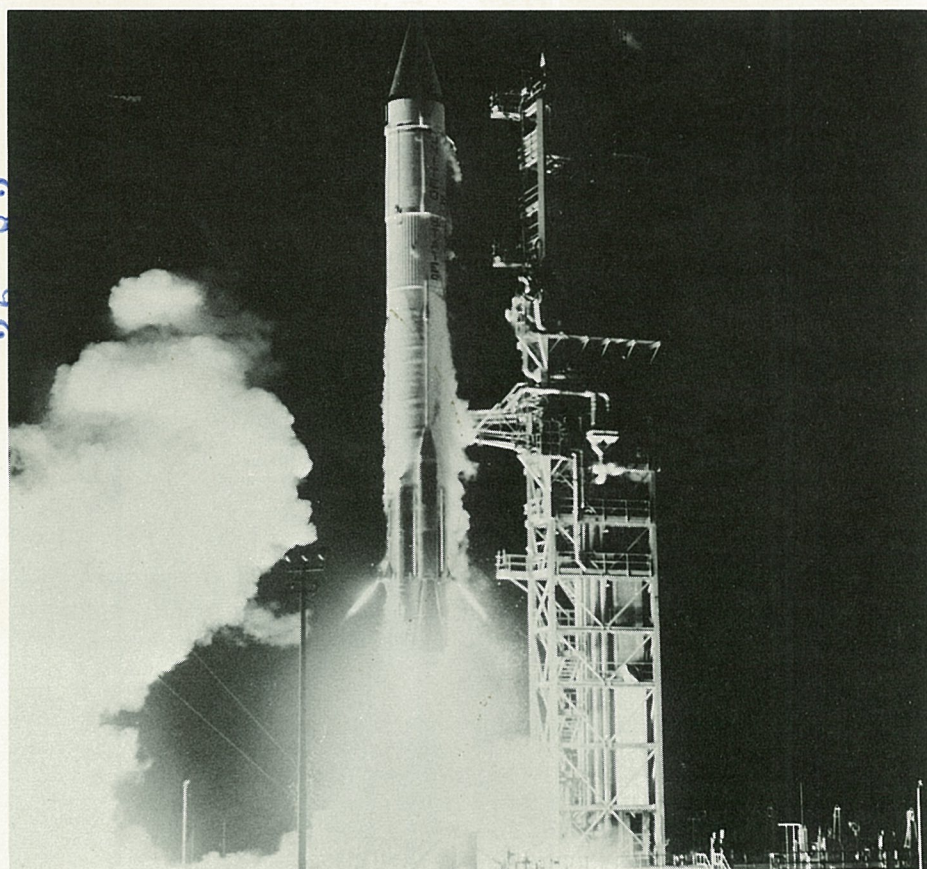
"This launch was even more precise than the AC-25 launch of the first Intelsat IV last January," Hammond said. "We were extremely pleased."

A solid motor on the Intelsat IV was fired the following day to place it in a circular earth-synchronous orbit from which it was to drift to its permanent station over the Atlantic to begin commercial service this month in relaying communications between the U.S. and Europe.

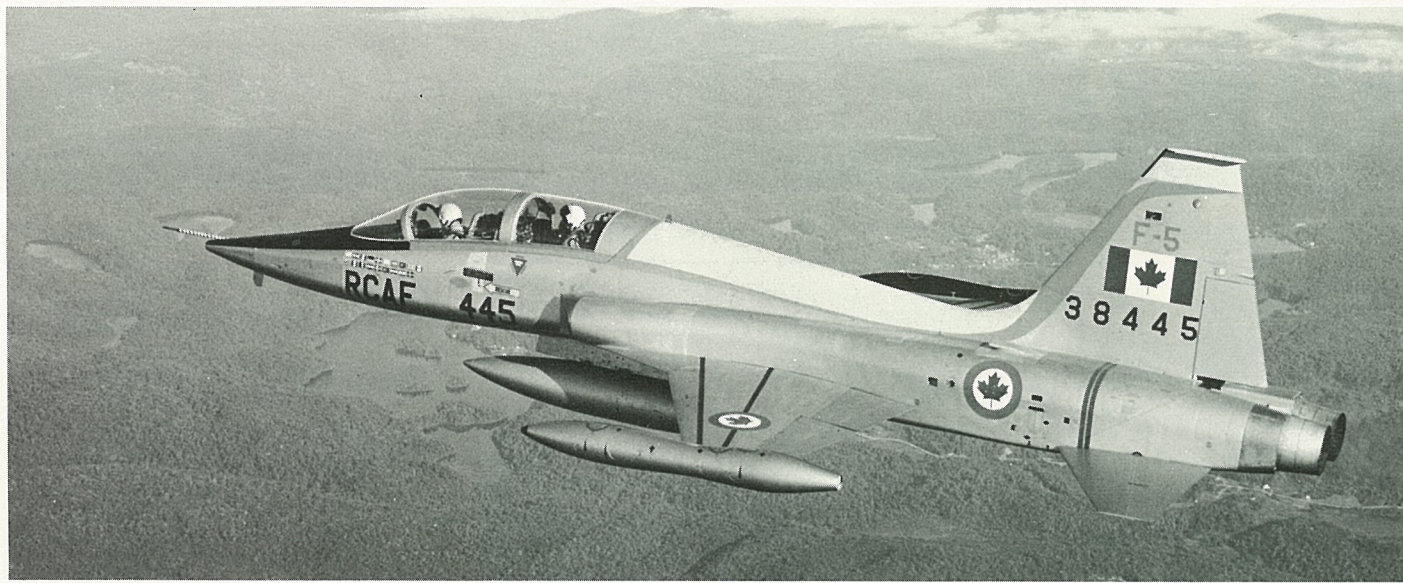
After the Atlas booster and sustainer engines powered the first four minutes of flight, the Centaur had a first engine burn of 6.12 minutes. Following a 14.9-minute orbital coast, the Centaur main engines were refired for 72.7 seconds. The satellite then was separated and the Centaur was turned and its orbit changed to separate it from that of the Intelsat IV through "blowdown" of remaining propellants.

Launch of the AC-26 had been previously delayed by an earlier failure of an Atlas launch vehicle in an Air Force launch, one additional day prior to the launch by high ground winds, and then for 55 minutes before actual liftoff by a faulty land-line

(Continued on Page 2, Col. 4)



ATLAS-CENTAUR IN ACTION — Second Intelsat IV communications satellite was successfully launched last month from Cape Kennedy. Convair Aerospace Division's Atlas-Centaur launch vehicle was used to place the commercial satellite in orbit. First Intelsat IV was launched last January.



CANADIAN FIGHTER — Sporting Royal Canadian Air Force markings, Canadair-built CF-5D is shown in flight. Canadair will build 18 'D' models for Canadian armed forces and two for the Venezuelan government.

Aerospace Remains One of Top Employers

Employment in the aerospace industry declined from 1,069,000 workers in December, 1970, to an estimated 931,000 in December, 1971. Despite this continuing drop, the aerospace industry remains the nation's largest manufacturing employer, according to a recent AIA report.

Production workers in the aerospace industry dropped from 528,000 in December, 1970, to 466,000 in December, 1971, an 11.8 per cent decrease. Employment of scientists and engineers is expected to continue to decline from the peak of 235,000 in June, 1967. It is estimated that employment in this category will be reduced to 147,000 by June, 1972.

During 1971, production workers made up 49 per cent of total employment, scientists and engineers accounted for 16 per cent, technicians 4 per cent, and the remainder were in administrative, clerical and maintenance categories.

Weekly earnings of production workers in the aerospace industry rose from \$171.95 to \$178 between 1970 and 1971 as average hourly earnings increased from \$4.15 to \$4.33 in the same period. Total industry payroll declined from \$11.4 billion to \$10.8 billion because of the decrease in employment.

Average weekly hours in the aerospace industry remained the same at 41.5 in 1970 and 1971. Overtime increased from 2.0 to 2.1 hours in the same period.

National DC-10 Sets LA-Miami Record

A National Airlines DC-10 Trijet set a new world speed record for commercial aircraft of three hours, 38 minutes and 32 seconds on a flight from Los Angeles to Miami last month. The old record was three hours, 58 minutes and 55 seconds.

General Dynamics Convair Aerospace Division in San Diego builds 127 feet of the 180-ft. fuselage for the McDonnell Douglas Trijet.

In setting the record, the plane traveled at an average speed of 650 miles an hour over the 2,326-mile route, reaching a top ground speed of 725 mph with tail winds at one point.

EB Awarded Contract

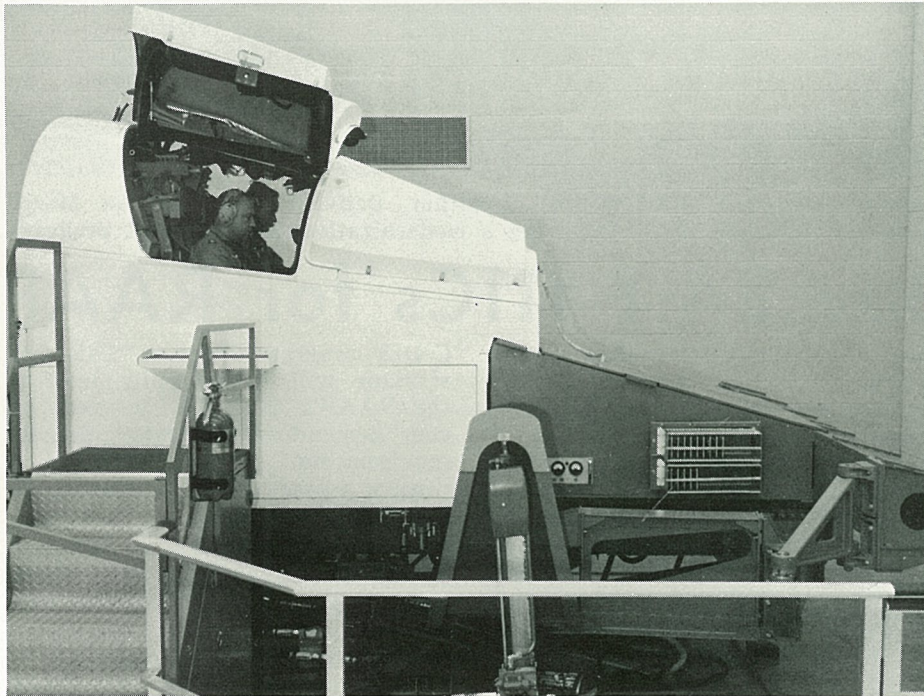
Electric Boat Division is receiving a \$2.1 million modification contract from the Naval Ship Systems Command for long lead-time materials for Poseidon missile conversion of Benjamin Franklin class submarines, according to a Defense Department announcement.

General Dynamics World

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SIMULATION — Air Force crews at the 27th Tactical Fighter Wing, Cannon AFB, N. M., are now flying "missions" in two F-111D simulators.

Second F-111 Mission Simulator Delivered to TAC Fighter Wing

The second F-111D Mission Simulator was delivered to the 27th Tactical Fighter Wing at Cannon AFB, N. M., on schedule in December. Delivery of the first simulator was made in October.

Controlled by computers, these simulators enable air crews of the 27th to fly "missions" using the F-111D Mark II avionics system.

Training will include various procedures for the cockpit; pre-flight and starting; normal and emergency flight situations; navigation and instrument flight; penetration; attack; weapons delivery and post-flight and shutdown.

Both simulators are equipped with Mark II avionics systems, including the F-111D unique integrated display set.

This set consists of the vertical situation display for the pilot and the multi-sensor display for the weapon systems operator plus a heads-up display for each.

These displays consist of television-type screens in front of each crewman

on which multiple flight information can be displayed visually and simultaneously.

The aircraft commander's screen, the vertical situation display, is primarily an attitude direction indicator, but it can also display attack-radar, terrain-following, and weapon-delivery information. The weapon systems operation screen can display attack-radar information, along with inputs from the terrain-following radar; it can also repeat all vertical situation display indications.

A heads-up display, located above each crew member, gives crewmen tactical information for weapons delivery, along with primary flight-reference data. This precludes their having to look down at various cockpit panels to get the same information.

Four F-111D models have already been delivered to the 27th. Two aircraft a month are scheduled for delivery for January, February and March. The delivery rate increases to six aircraft a month for April.

Canadair to Build CF-5s for Canadian Forces, Venezuela

The sale to Venezuela of 20 CF-5 aircraft, together with associated program support equipment and training, has been announced by the Canadian government.

Eighteen of the Canadair-built aircraft will come from current stock in the Canadian Armed Forces inventory and will include 16 CF-5A single seaters and two CF-5D dual models to facilitate early training in Venezuela. They will be replaced in the Canadian Forces by 18 new CF-5D models to be produced by Canadair, which will also build two new CF-5Ds for Venezuela.

Because of a new advanced training role assigned to the CF-5, more of the dual models are required. The CF-5s replace the aging T-33 Silver Star jets in this role.

Earlier the Defence Dept. had planned to convert single seat CF-5s to dual status at a cost of approximately \$10,000,000. The new arrangement will still require an expenditure of this amount but will result in significantly greater production for the Canadian aerospace industry and corresponding new employment.

Production is expected to begin in the near future and will go on for three years. Delivery of the new CF-5D aircraft to the Canadian Armed Forces will begin toward the end of 1973.

A total of 115 CF-5 aircraft were bought for the Defence Dept. in 1968. They included 89 CF-5As and 26 CF-5D models.

Two squadrons recently were committed on a standby basis to NATO's northern flank in Norway. An additional role recently assigned is the provision of quick response photographic reconnaissance over Canada and its off shore waters.

The aircraft also continues in its original role of providing non-nuclear tactical support for Canada's ground forces.

Intelsat . . .

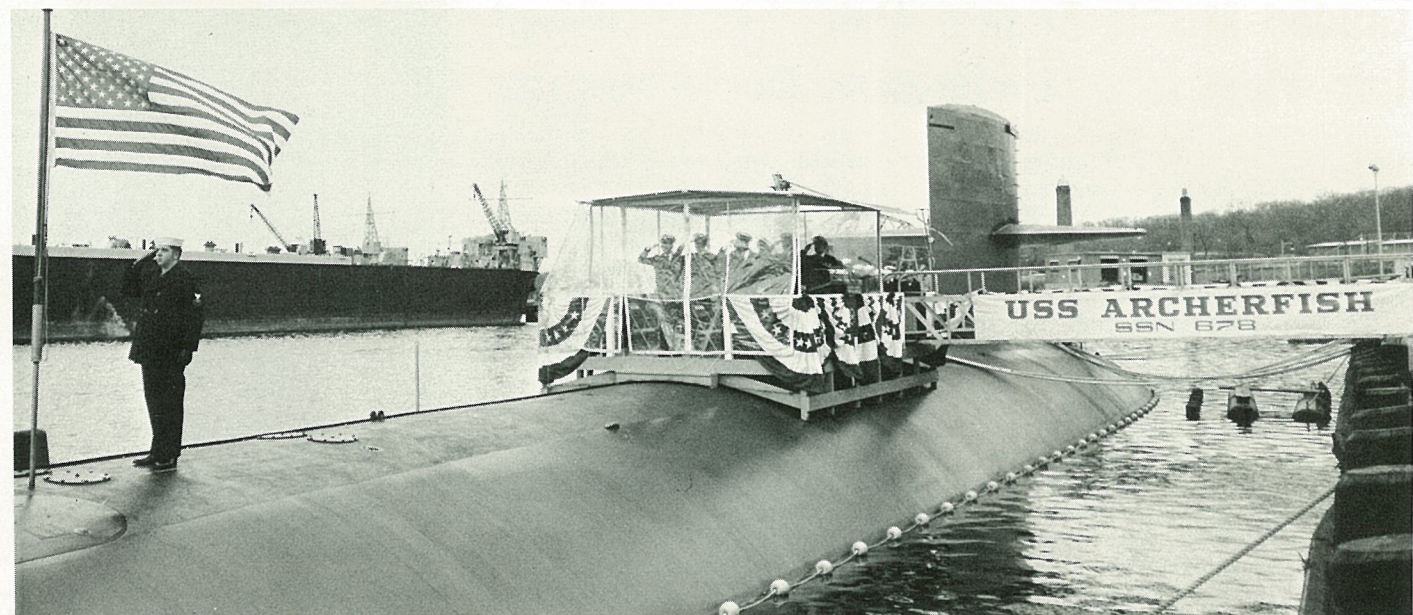
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carrying booster tank pressure measurements.

Failure of the earlier Atlas had resulted in installation of a special probe in the AC-26 booster to verify temperatures in the sustainer engine's turbine inlet just prior to liftoff.

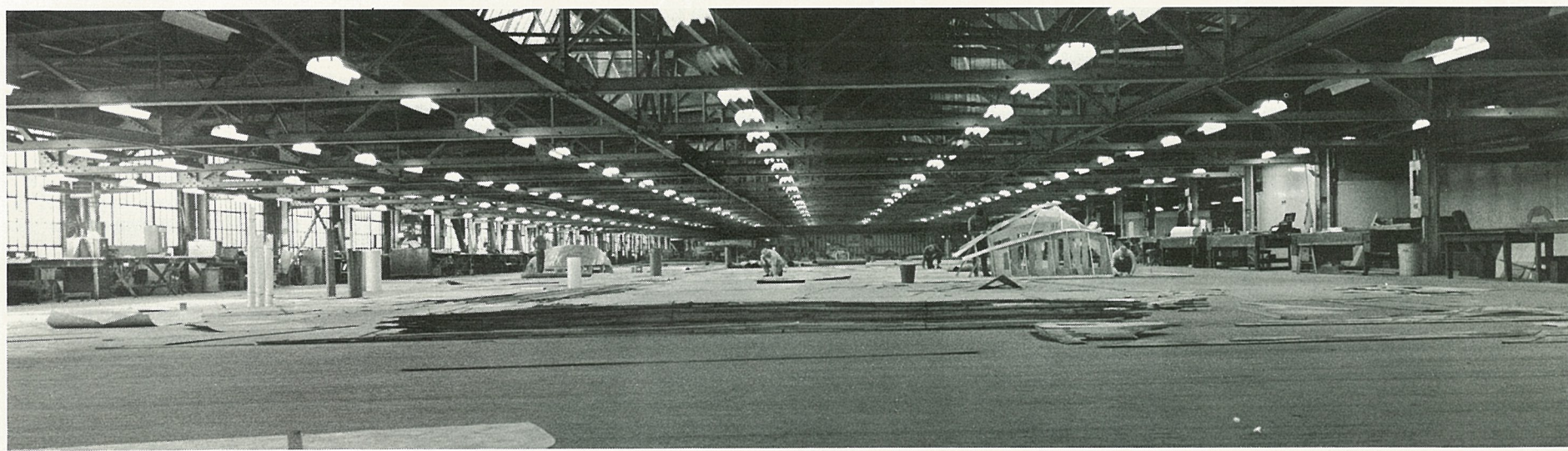
"We had a good team effort," Lucas commented. "Everyone pitched in and did everything possible to make sure the launch would be successful."

Convair Aerospace-SD representatives at Cape Kennedy for the launch from Complex 36A included Deane Davis, assistant director-launch vehicle programs; Clifton C. Brewer, sales manager-launch vehicle programs; B. R. Foushee, Centaur-D program manager; Karl Kachigan, chief engineer-launch vehicle programs; Lucas; and an Atlas-Centaur launch support team. Dan Sarokon was launch conductor.



CEREMONY — 'USS Archerfish,' built by Electric Boat Division, was commissioned last month in ceremonies at New London Submarine Base. Undersecretary of the Navy John W. Warner was principal speaker at ceremony.

Computer Techniques Aid Skilled Craft of Ship Design



ELBOW ROOM — Vast mold loft area at Quincy Shipbuilding is now used mainly for template jobs too small to be done economically by computer.

Modern Methods Save Quincy Yard Time and Material

The introduction of modern computer applications to shipbuilding technology has nowhere been as dramatic as in the field of ship design. The naval designer and his compatriot, the mold loftsmen in the shipyard, have for decades turned out first the basic details of the ship's shape, then the faired (or finished) lines, and lastly the full-sized wooden templates and molds which the steelworker could use to cut and shape the steel plates for the ship's hull.

Of all the areas of shipbuilding, this has been the one requiring the greatest manual skill and craftsmanship. The loftsmen translated the designer's ideas into full scale lines from which came the eye-pleasing curves and sweep of a ship.

Shipyard Fixture

The "mold loft" was a fixture in all shipyards. It had to be large to accommodate plans for more than one ship at a time and provide sufficient space for the templates and molds. At the Quincy Shipbuilding Division of General Dynamics, the loft above the steel fabrication shop was 766 feet long and 188 feet wide. The loft rarely housed more than 50 or 60 men (except in wartime) who labored quietly apart from the clatter and din elsewhere in the shipyard. The spicy smell of the basswood used for templates was ever present, as kneeling loftsmen drew their curves and lifted their molds.

Today the loft space remains although part of it has been taken for storage, training classrooms, and offices for prospective ship's crews. Dust has accumulated in corners of the gray painted floor which was once freshly sanded and coated after each ship was completed.

Today the same work is performed in a new office with desks, tables, and an assortment of paper tape punchers and transposers. The change—and it's been dramatic—resulted from a computer-aided system designed to fair ship's lines, produce a body plan, "nest" various parts on a steel plate,



CONTRAST — Left, loftsmen work on templates apart from shipyard noise, while right, similar work is being



performed in office using computer-aided Autokon. Quincy was among first to move from loft to drawing board.

and generate a paper tape to guide the burning machines that cut the steel. This system is known as Autokon and is the product of extensive research by the Central Institute for Industrial Research (CIIR) in Oslo, Norway.

Since full-sized templates were bulky, hard to store, and easily damaged, their elimination has been studied at length. During World War II, when many yards were building the same class of ship, it was difficult to exchange carloads of fragile templates among the shipyards — and the duplicate sets were very costly.

One of First

In 1956, Quincy became one of the first yards to move the work from the mold loft floor to a drawing board — where full scale templates and molds were replaced by 1/10th scale art. No technical change in lofting was made, only a change in scale, placing on paper what the loftsmen formerly did on the floor.

The scaled drawings were then photographically reduced to 3" by 5" glass negatives. The image on the negative was projected from above and in full scale on the steel plate. Using chalk and center punches, the steel workers, as before, marked the plate for cutting by the burners.

This so-called "optical" process had several advantages: the small glass negatives required no repairs in use, could be easily corrected by pen, and could be duplicated and sent to other yards.

Automation

Optical layout soon became routine in U.S. shipyards. Meanwhile, automation in the cutting of steel developed rapidly through increased use of large multiple-torch burning machines guided by an electric eye which scanned lines drawn on paper. Previously used for multiple straight cuts, the automatic burning machines, or ABMs, found fast acceptance in European shipyards, underlining the comparative lag in U.S. yards of that period.

As the ABMs evolved, using the 1/10th scale glass negative technique, the loftsmen was still at his drawing board working his skills with a pen and magnifying glass. Around the corner were the computer and Autokon, ultimately to make a still greater

impact on lofting. The computer would be able to instantly perform the trial and error work which produced the best ship's lines. Lacking was the programming and development of the routines which would harness the split-second speed of the computer.

In 1967, after a few key employees studied the system in action in European shipyards, Quincy Shipbuilding Division purchased the first rights to the Autokon system in the U.S. In 1968 and 1969, Quincy initiated Autokon on a group of Navy ships then being built. The Autokon programs were proved out and the new method refined. When the yard was ready to start on the new Lykes Bros. Seabee ships, Autokon was also ready. *SS Doctor Lykes*, floated out of her building basin in July, 1971, was the first ship to be completely developed in the United States using the computer-aided system.

Loftman's Art

Machine-produced drawings reflect all the graceful curves which had been the loftsmen's product and art. But Autokon has actually added to the loftsmen's inventory of skills. Through training programs he has learned the Autokon language and he codes input for the computer system. His practiced eye serves as the criterion for the accuracy of the ship's final lines and if he is not pleased

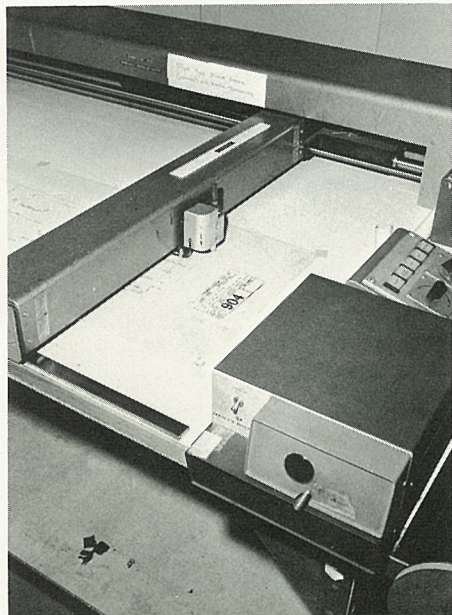
with the result, he can correct the input by altering a punched card.

In the future, the ship's final lines drawing will be produced by a drafting machine using Autokon data. The longitudinal fairing segment will establish shell plate sizes without the traditional but costly hull model. Repetitive drafting tasks such as frame outlines and basic structural drawings can be made by the machine, using tapes produced by parts programming. The designer is then freed from some of the more time-consuming portions of his work to pursue his art of ship design.

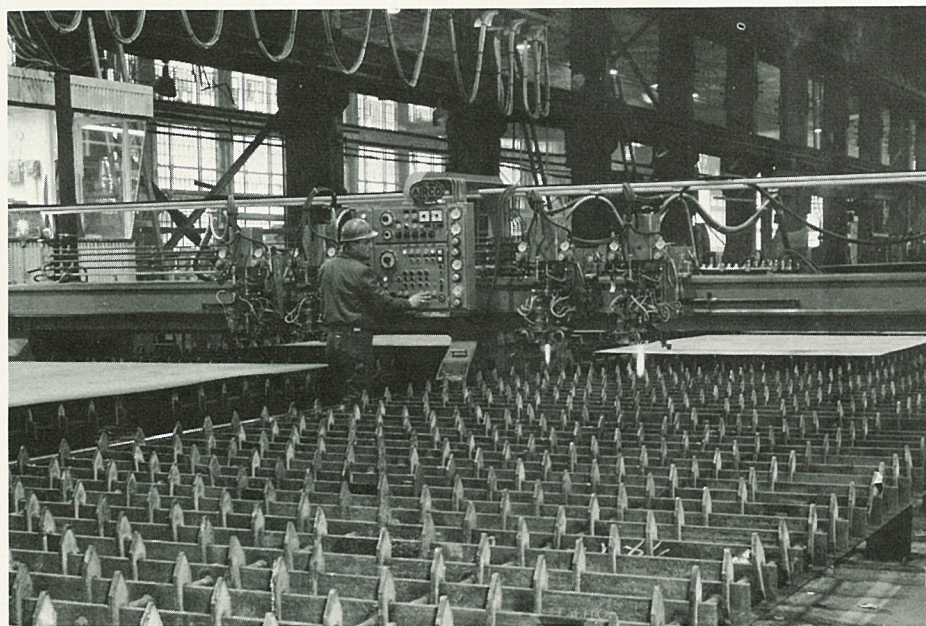
Standard Procedure

Today at Quincy, Autokon is standard procedure. The savings have come primarily from the increased accuracy of the finished pieces as cut on the burning machines. In pre-Autokon days, tolerances of 3/4-inch brought few complaints; today, anything over 1/4-inch is unacceptable. This accuracy is the key to low assembly man-hours and better fit during erection of the finished steel ship sections.

The mold loft is still used for turning out some templates — mainly for jobs too small to be done economically on the computer. But the loftsmen has made the transition with automation, and Autokon and the computer have made him an even more valuable part of shipbuilding technology.



CONVERTER — Drafting machine converts paper tape to line drawing.



ABM IN ACTION — Programmed tapes generated by Autokon are verified on drafting machine to ensure accurate cuts by automatic burning machine.

Convair Aerospace · Electro Dynamic

San Diego



OFFICIAL GREETING—Congressman Bob Wilson, center right, is greeted by Len C. Perry, Convair-SD manager of material contracts, during visit to combined Convair and Electro Dynamic exhibit. Others from left, are Earl

Hixson, Convair small business administrator; Tom R. Daugherty, ED purchasing agent; Col. Charles Merz, commander of Defense Contract Administration Services Region-SD; and F. L. Packard, ED procurement manager.

Community Services Crusade Gets Boost From Con-Trib Clubs

Con-Trib Clubs for Convair Aerospace and Electro Dynamic operations in San Diego recently pledged a total of \$335,000 to the United Community Services of San Diego County for 1972.

Included was a pledge of \$290,000 from the Convair Employees Con-Trib-Club and \$45,000 from the Electro Dynamic Electronics operation Employees Con-Trib-Club for use toward support of 70 health, welfare, youth, and community service agencies in the county.

Highest Pledge

Pledges by the General Dynamics Con-Trib-Clubs helped the United Crusade reach a record \$5,857,100 in pledges — an increase of \$300,000 over the 1970 Crusade total. The Convair Employees' Con-Trib-Club pledge was the largest employee group pledge received in the campaign.

Lyman C. Josephs, Convair Aerospace Division vice president and program director for the lightweight fighter prototype program, served as chairman of the major firms division of the Crusade. The major firms division consisted of more than 100 of the largest firms in six trade group sections of the Crusade.

Harry Shirley of the Electronics operation and Paul Bazler of the San Diego operation each served for three months as loaned executives for the Crusade.



FREE FOOTWEAR—J. W. Collins of SD's Dept. 142-1, center, won pair of safety shoes in drawing after standards and calibration labs took first in safety contest for September. Helping make selection are Len Breen of safety section, left, and A. J. Woodington, standards and calibration.

Small Businesses Briefed On Purchasing Procedures

Representatives of small business firms were briefed on purchasing procedures used by Convair Aerospace and Electro Dynamic operations in San Diego at a "Business Opportunities in Federal Procurement" Conference Dec. 7 in San Diego.

A joint exhibit pictured major products of Convair Aerospace-SD and Electro Dynamic-SD and pointed out that 70 per cent of the contracts awarded annually by the two operations go to small business firms.

Present to answer questions throughout the day were F. L. Packard, procurement manager, and T. R. Daugherty, a purchasing agent, for Electro Dynamic-SD, and L. C. Perry, manager of material contracts, and E. E. Hixson, small business administrator, for Convair Aerospace-SD.

Hixson said capabilities questionnaires were distributed to representatives of 175 small business firms in the San Diego area that have not previously been listed as potential vendors by the two General Dynamics operations.

The conference was sponsored by Congressman Bob Wilson (R-Calif.) and the National Contract Management Association.

Participants included representatives from the military services, Defense Supply Agency, Defense Contract Administration Services, 12 other federal agencies, and 20 government

prime-contractor firms from throughout Southern California.

Frederick D. Sargent, vice president and small business liaison officer for the Bank of America, was luncheon speaker. Other speakers included Harvard W. Powell, director of small business and economic utilization for the Department of Defense, and Bart J. Crivella, U. S. Commerce Dept.

Rep. Wilson said he is seeking to have a regional office of the National Oceanic and Atmospheric Administration (NOAA) established in San Diego.

RECEPTION CENTERS TO PROVIDE EFFICIENT ASSISTANCE TO VISITORS

A new procedure has been established at Convair Aerospace-SD's Kearny Mesa and Lindbergh Field plants to provide more efficient reception and assistance for visiting Department of Defense, NASA, and commercial customer representatives.

Gary P. Mims, who directs the reception centers in the Bldg. 2 lobby at Kearny Mesa and Bldg. 5 lobby at Lindbergh Field for the sales department, said division personnel arranging for customer visits should notify the appropriate receptionist in advance by phoning ext. 2868 KM or 1527 LF.

Barbara Freeman is receptionist at the visitor information center at Kearny Mesa and Lillian Truex at the visitor information center at Lindbergh Field.

Visitor's register forms, prepared in advance or at time of arrival, in-

James Brown Named Director of Quality For SD Operation

James A. Brown, former STOL (short takeoff and landing) aircraft program manager for Convair Aerospace Division, has been appointed director of quality assurance for the San Diego operation.

He reports to and serves on the staff of M. C. Curtis, vice president and general manager. Reporting to Brown are Robert W. Miller, former C-5 empennage program manager who has been appointed manager of procurement quality assurance; Fred Lee Jr., manager of quality assurance-Kearny Mesa plant; and Roy H. Gilliland, manager of quality assurance-Lindbergh Field plant.

Brown joined Convair-San Diego in 1952 as a thermodynamics engineer and later served as a design specialist, thermodynamics group engineer, chief of thermodynamics, and chief of technical analysis.

He was named manager of preliminary design in 1963, program manager for the C-141 empennage program in 1966, and manager of preliminary design in 1967.

Brown served as proposal leader for the combat air rescue aircraft (CARA) joint Convair-Canadair proposal effort in 1967, for the VFX proposal in 1968, and for the A-X aircraft proposal in 1970.

He assisted with program management for the Space Shuttle program Phase C/D effort for six months last year before being named STOL program manager for the division in July.



James Brown

clude the individual's name and rank, organization, purpose of visit, person to be contacted, date and time in, and duration of stay. The visitor signs the form under an agreement regarding safeguarding of classified information and conformance with company rules and regulations.

The visitor's register form becomes the visitor's badge when it is inserted in a clip-on plastic holder.

Visitors for more than one day are to return badges to plant guards at the end of the day and pick them up the following morning at the visitor reception center. Time of final departure will be noted by the guard when the badge is turned in for the last time.

A list is being published each Friday of visitors expected the following week for distribution to division staff members and department managers.

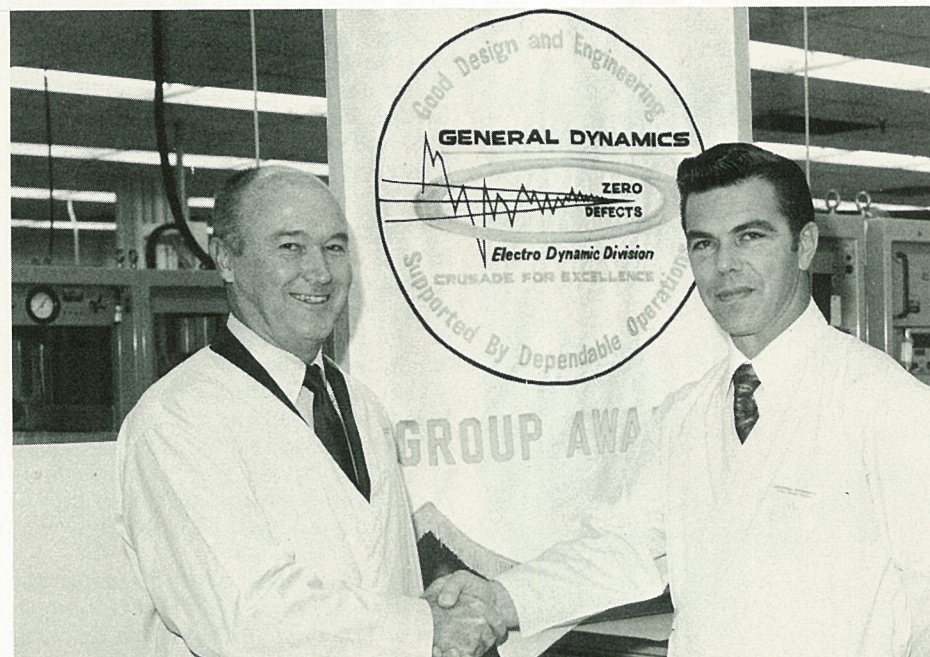
ED Departments Earn Third Quarter Honors For ZD Achievements

Third quarter Zero Defects awards, part of the Electro Dynamic Division's "Crusade for Excellence," were presented to two departments in the Electronics operation, San Diego, by W. E. Bratton, vice president and general manager.

Spares administration, Dept. 523, received the departmental award for "outstanding performance in the reduction of defects and meeting schedules and cost commitments." Don Sullivan, manager, logistics administration and Bill Creamer, logistics program co-ordinator, accepted the departmental honors.

The F-111 AGE group, Dept. 449, earned the second award for reducing defect rates by 30 per cent. Jim Campbell, general foreman, accepted the group award for the department.

Both departments were presented a Zero Defects "Crusade for Excellence" banner to be displayed in their working areas.



ELECTRONICS EXCELLENCE — W. E. Bratton, left, Electronics operation vice president and general manager, congratulates Jim Campbell, F-111 AGE department general foreman, during presentation of group ZD award.

California Withholding Exemptions Same as Claimed for Federal

Deductions for the new California State Withholding Tax were reflected for the first time in checks received last week by Convair Aerospace-SD and Electro Dynamic-SD employees.

James L. Terrien, Convair Aerospace-SD payroll supervisor, said the state withholding tax for each employee is being computed based on the number of exemptions and marital status claimed on the employee's federal withholding exemption certificate (federal Form W-4).

The Federal Insurance Contributions Act (FICA) tax is being increased this year and will be deducted at the rate of 5.2 per cent of the first \$9,000 of wages to a maximum of \$468. Last year the taxable limit was \$7,800 and the maximum deduction was \$405.60. The company contribution for each employee has increased by the same amount.

California State Disability Insurance (DI) is also being increased and on Jan. 1 will be withheld at the rate of 1 per cent of the first \$8,000 — to a maximum of \$80.

Questions may be directed to the payroll sections.

SERVICE AWARDS

Service emblems due between Dec. 1 and Dec. 25.

CONVAIR

Thirty-Five-Year: Dept. 031, A. A. Duncan; 046, M. M. Doerr.

Thirty-Year: Dept. 001, W. E. Senay; 027, G. C. Lang; 031, R. J. Collette; 045, B. Flores; 131, M. J. Chilcote; 147, C. E. Boyd; 221, R. W. Chambers; 250, J. H. Maloney; 400, Y. Z. Morris Jr.; 401, J. A. Ross; 407, E. R. Burgess; 512, C. J. Rezek; 732, P. P. Standley; 756, C. A. Harrington; 802, H. A. Adams Jr.; 810, C. F. Lewallen; 850, P. Eramo; 860, N. Grand; 962, S. Pauchnick.

Twenty-Five-Year: Dept. 015, A. W. Beckman, C. C. Byrne Jr.; 019, O. R. Bracey; 046, M. W. Walker; 220, B. L. Fowler, J. J. Ward; 223, M. V. Fortson; 250, F. A. Chavez; 400, T. H. McManus; 401, J. D. Burt; 524, C. P. Freeman; 759, G. W. Stacy Jr.; 761, S. P. Contasti; 999, G. O. Withem.

Twenty-Year: Dept. 016, B. M. Swanson; 031, F. L. McCord; 100, M. C. Curtis; 107, B. A. Jones; 149, D. V. Fox; 196, M. K. Kehle; 197, F. A. Seaborg; 204, C. B. Robinson; 222, V. M. Ferson; 250, E. L. Brush, W. A. Engelke, G. W. Lyons II; 400, J. D. Beamer, M. Monji; 460, H. M. Pope; 508, M. B. Clark; 511, F. N. Bergen; 518, R. M. Walraven; 575, E. E. Whigham; 578, G. W. Conrey; 579, S. S. Sifuentes; 587, E. F. Quinn Jr.; 754, H. E. Shidner; 761, H. Lee; 842, D. V. Dearmin; 952, W. A. Roberts; 985, B. Slot.

Fifteen-Year: Dept. 015, J. J. Cole; 042, E. J. Sundstrom; 043, J. M. Dixon, G. P. Knaabe, D. P. Reyes; 058, R. L. Matthews; 101, A. M. Akers; 130, D. N. Lange; 131, D. D. Hendry; 145, R. S. Rock; 148, J. V. Bartle; 151, O. L. Harris; 170, H. Knight; 210, H. A. Jackson; 222, J. J. Gartland Jr.; 223, J. S. DeVault; 250, K. M. Lindsey, M. C. Roberts, H. W. Schleibaum Jr., J. M. Wiley; 400, E. W. Arnold; 401, P. P. Balistreri; 460, W. W. Fields; 507, A. R. Cox, S. R. Lewandowski; 508, H. Reynolds; 512, H. E. Wexler; 524, R. L. Stegall; 566, D. L. McCrary; 595, C. H. Gutzler; 754, J. Plikshie; 761, F. M. French; 836, E. K. Klumpp; 840, R. A. Besse; 842, E. F. Cox; 967, K. S. Telfer; 979, D. L. Blanchard, H. F. Spivey; 985, R. C. Forrest; 999, F. M. Conner, P. A. Kessel Jr.

ELECTRO DYNAMIC

Thirty-Year: Dept. 774, R. A. Nichols; 814, R. H. Hall.

Twenty-Five-Year: Dept. 106, A. Wrightson Jr. **Twenty-Year:** Dept. 421, Maryanna G. Dukett; 426, R. L. Kinney; 523, R. Behlman.

Fifteen-Year: Dept. 391, E. Harris; 525, T. A. Touey; 614, J. Strozkye; 652, C. C. Lewis; 711, D. J. Costelow.



BODY BUILDING — Roy Parsell, foreground, does Health Club. Others working out at rear are Elbert a little "one-arm rowing" with weights device at CRA Smith, John DeBevoise, Ray Jones, and Bruce Livermore.

Members Find CRA Health Club a 'Weight Reducer'

Employees and members of their families who made New Year's resolutions to reduce weight or improve their physical condition have been invited to take advantage of CRA Health Club facilities at Kearny Mesa to help make their '72 resolutions come true.

Planned programs of exercise, individually tailored to the needs of the individual, can be arranged through the Health Club instructors. Ralph Mansfield directs the club and is men's instructor and Judy Work is women's instructor.

Members have use of a well equipped gym with a wide range of weight lifting and exercise devices, showers and lockers, men's and women's saunas, and outside running courses.

The Health Club is open to women only from 9:30 to 11 a.m. Mondays through Fridays and to all members from 11 a.m. to 10 p.m. Mondays through Thursdays and from 11 a.m. to 9 p.m. Fridays.

Memberships are open to all employees and dependents over 12 years of age. Individual memberships are \$15 for six months and \$25 a year, family memberships are \$21 for six months and \$35 a year. Running memberships, providing use of all facilities except gym equipment, are \$9 for six months and \$15 a year.

Guests may use the facilities for \$1.50 per visit. Lockers may be used without charge during workouts or may be leased for full-time use at \$6

per year. Towels are available at 10 cents.

The Health Club has 400 members and, before the year-end holidays, was being used by an average of 100 to 125 members a day.

Members of the club have a variety of reasons for spending their time there—almost all related to improving their physical condition.

"Weight lifting and running help me maintain a decent weight without having to resort to dieting," said Robert Hintz of Convair Aerospace-SD's Dept. 988-2.

"I find my alertness and efficiency greatly improved in the afternoon since I work out at noon," he said. "It takes little time out of my day since I used to waste my lunch time, anyway."

Larry Messacar of Dept. 954-0 also says running at noon gives him a refreshing mental break from the office grind. Bill Marks of jigs and fixtures Dept. 401-5 says he likes the gym "because it's so well equipped."

"I run to work out and salve my conscience due to my other dissipations," commented Vic Sundfer of Dept. 951-6. "And I'm about breaking even," added S. E. Nagy, a running colleague.

WATS Lines Link San Diego to Pomona

Direct dialing from General Dynamics' San Diego plants to Electro Dynamic Division's Pomona operation now is possible through California Wide-Area Telephone Service (WATS) lines.

Employees at the Kearny Mesa plant dial "8" plus the extension and employees at the Lindbergh Field plant dial "58" and the extension at Pomona for direct connection.

Directions for all long-distance dialing are included in the new combined Convair Aerospace-SD and Electro Dynamic-SD plant phone directories that have been issued during the past few days.

Christmas Fund-Raising Projects Provide Temporary Assistance for Needy Cases

Personnel from several Convair Aerospace and Electro Dynamic departments helped make Christmas a happy occasion for several needy families and underprivileged children in the San Diego area.

Material department personnel from Convair Aerospace-SD collected \$966 for gift and food-purchase certificates and in addition packed a panel truck with canned goods, toys, and clothing contributions for four families (seven adults and 23 children) recommended for assistance by the Salvation Army. Don Berhow served as chairman for the annual departmental project.

Electro Dynamic's support systems group in Bldg. 33 at Kearny Mesa collected \$300 for Children's Hospital and Health Center—continuing the annual assistance provided in previous years through the former Con-

vair-SD test equipment group. An original oil painting was awarded in a drawing held in conjunction with the contributions, which were given in lieu of a Christmas card exchange between employees.

Production engineering Dept. 400 at Convair's Lindbergh Field plant assisted disadvantaged children through five organizations with \$601 collected also in lieu of a Christmas card exchange. Gifts for the children were provided through Boys and Girls Aid Society, Hillcrest Receiving Home, American Indians of San Diego County, Home of Guiding Hands in Lakeside, and Sheltered Workshops of San Diego County.

Electro Dynamic's logistics support Dept. 7-12 collected \$34 for bedspreads at the Home of Guiding Hands. Johnny Cash donated a poinsettia plant from his wife's flower shop for a raffle held in conjunction with the collection of funds.

Retirees from the General Dynamics Alumni Club also collected \$100 at their Dec. 14 meeting to help two needy families known personally by members of the club.

Special 'Sea World Days' Planned For General Dynamics Folk at SD

Tickets for General Dynamics' family days at Sea World, Jan. 29 and 30, are now on sale through Convair Management Assn. boosters and CRA outlets.

Cost is \$2.75 for adults (a \$1.75 saving), \$1.75 for juniors 13 through 17 (a \$1.60 saving), and \$1 for children 5 through 12 (an 85-cent saving).

The Management Assn. scholarship fund will receive 25 cents from each adult and junior ticket sold.

The single price will cover admission to the 80-acre aquatic park from 10 a.m. to dusk, all shows and exhibits, and the ticket holder's choice of one ride on a hydrofoil boat, the 320-foot Skytower, or a cable car Skyride.

Shamu, a trained killer whale, stars with Stanley Starmaker, a chimp playing the role of a casting agent, in

"Shamu Goes Hollywood" at Sea World's new 3,000-seat stadium (and million-gallon Shamu tank).

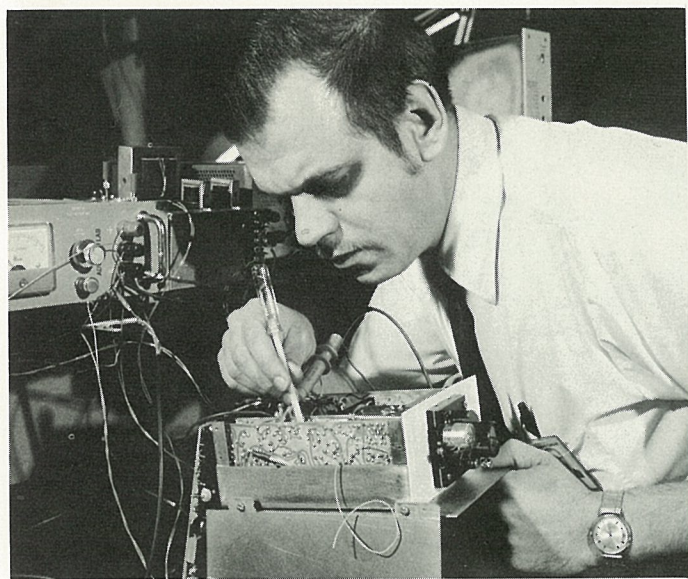
Aphrodite, the world's highest jumping bottle-nose dolphin, along with other dolphins and a trained chimpanzee are featured in the lagoon show and Sea World's sea maids cavort with trained dolphins and a sea lion in an underwater theatre production.

A seal and penguin show that also includes a trained elephant seal, a roller-skating penguin, and a piano-playing duck and a computerized water fantasy show are among other attractions.

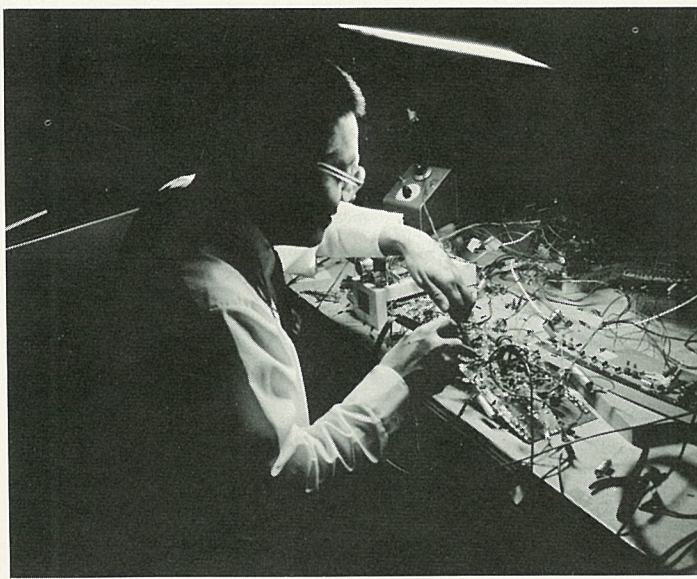
There is a gray whale exhibit, a walrus pool, and a Japanese village where women divers can be seen retrieving cultured pearls from underwater oyster beds.



SPLASHY STAR — Shamu, a two-ton killer whale, will be featured attraction in one of several shows to be seen during GD "Sea World Days."



BOX CAMERA — Left, Bob Senus, S-C senior engineering aide, makes adjustment on one of new Vistaphone picture telephone camera units. Right, Koho Ozone,



principal engineer, is shown with breadboard version of new electronic camera designed by Stromberg-Carlson. S-C now ranks as the newest camera maker in Rochester.

Stromberg-Carlson Building 'Eyes' for Use with Vistaphone

There's a new camera maker in Rochester, N.Y.; one whose name may be familiar but not in the photographic industry.

The newcomer, the General Dynamics Stromberg-Carlson subsidiary, won't challenge other Rochester firms whose names have become synonymous with camera construction. What's more, the new cameras don't even use film.

The cameras being built by S-C are the electronic "eyes" of the company's Vistaphone picture telephones. Their lenses focus on more than 500,000 tiny light sensitive diodes on a disc slightly over three fourths of an inch in diameter. It's called a silicon diode target array.

Vistaphone camera design takes advantage of S-C integrated circuit design and production capability. Several specially-designed S-C integrated circuits are incorporated in camera circuit designs. Use of these specialized small components will save space, reduce costs and enhance reliability.

Stromberg-Carlson's first Vistaphone units were developed nearly four years ago. They were fabricated mostly from purchased components modified for telephone system use. Subsequent changes included a facelift in the form of a new housing design. These engineering models served to demonstrate the feasibility of the basic design and to serve as station units used with the Vistaswitch switching applique equipment.

Stromberg-Carlson digital and analog systems engineering personnel under the direction of Dick Scott, have concentrated their efforts on a complete product design from the ground up. Vistaphone units have been designed to be fully compatible with Western Electric Picturephone instruments produced for use in the Bell System.

Work has begun on the next step in Vistaphone system development, one which will add another dimension of usefulness to these instruments. Future units will also be able to serve as desktop computer terminals linked to a central computer. Engineers at S-C are now studying approaches to the conversion of computer output to readable form on the picture telephone screen.

The first production Vistaphone instruments will go on field trial this year and it is projected that several thousand of the picture telephones will be in service by 1975.

Convair Aerospace Color Film on F-111s Wins Five Awards

"St. George and the Black Falcons," a true-to-life story of the F-111 and the men who fly it produced by Convair Aerospace Division for General Dynamics, has been awarded five major 1971 industrial photography awards.

Included are:

The Council of International Non-theatrical Events' CINE 1971 "Golden Eagle" award which qualifies the film to represent the United States in international film festivals and events abroad.

Industrial Photography magazine's first-place award in public relations, sales and advertising film competition.

The U.S. Industrial Film Festival's first-place "Gold Camera" award for outstanding creativity in the production of audio-visual communication in industrial film competition.

Information Film Producers of America's 1971 "Cindy" award for institutionally produced technical films.

The Film Council of Greater Columbus, Ohio's, Chris award for excellence of production.

"St. George and the Black Falcons," a 32-minute color production, tells the story of two men, Maj. Alexander Marquardt and Lt. Douglas Stenberg, who fly an F-111 for the 429th "Black Falcons" Squadron at Nellis AFB, Nev., and of their low-level practice "bombing" of an abandoned bridge on the outskirts of St. George, Utah.

William Conrad, star of the TV series "Cannon," narrated the production.



REDUCTION — Two Los Angeles Public Library staff members examine packet of microfiche which replaced stack of printed material in background.

DatagraphiX COM System Aids Los Angeles Public Library in Massive Record-Keeping

A DatagraphiX COM system is the newest development in the Los Angeles Public Library Automated Library Technical Services (ALTS) program, according to a recent article in *The American City* magazine.

Los Angeles is believed to be the first public library in the nation to develop a fully-integrated technical services program.

The ALTS, which started in 1963, has five phases which are scheduled for completion in 1973. They are: 1) registration of borrowers (6,000 per week); 2) acquisition of books (approximately 300,000 a year); 3) ordering and controlling of more than 35,000 periodical and pamphlet titles a year; 4) listing of all library holdings available in each of 65 library locations; and 5) circulation control of 90,000 transactions, including mailing about 7,000 overdue notices weekly.

Automation of the first phase, the patron registration system, started in 1966. The following year the book order system was implemented as the

second phase, replacing a manual system introduced in the 1940s. The success of this book ordering system is reflected in the fact it has been adopted by 16 other city libraries.

Start of the first two automated systems produced a new set of problems in the form of mass quantities of computer printout, necessitating a conversion to COM. This reduced the volume of about 1,500 miles of paper produced annually to two and one-half miles of microfiche each year.

The Los Angeles Data Service Bureau keypunches patron and book order information which is converted to magnetic print tape. The print tape is then processed on a DatagraphiX 4360 COM Recorder located at Computer Micrographics, Inc., a COM service bureau. CMI then delivers the microfiche reports to the library within 24 hours. Previously, a typical report with multiple copies to service all city libraries took two weeks to duplicate. CMI also provides 100 microfiche viewers used in the library.

Engineers Design Recycling System for Concrete Materials

Engineers at Material Service Corp., a General Dynamics subsidiary, have solved a major problem encountered at every Redi-Mix concrete yard—disposal of washout material, solids and the 200 to 300 gallons of water required daily to clean out each truck mixer.

The Material Service engineers have designed and built an installation that is actually a miniature sand and gravel plant at the company's Yard No. 3 in Chicago to recycle the concrete materials.

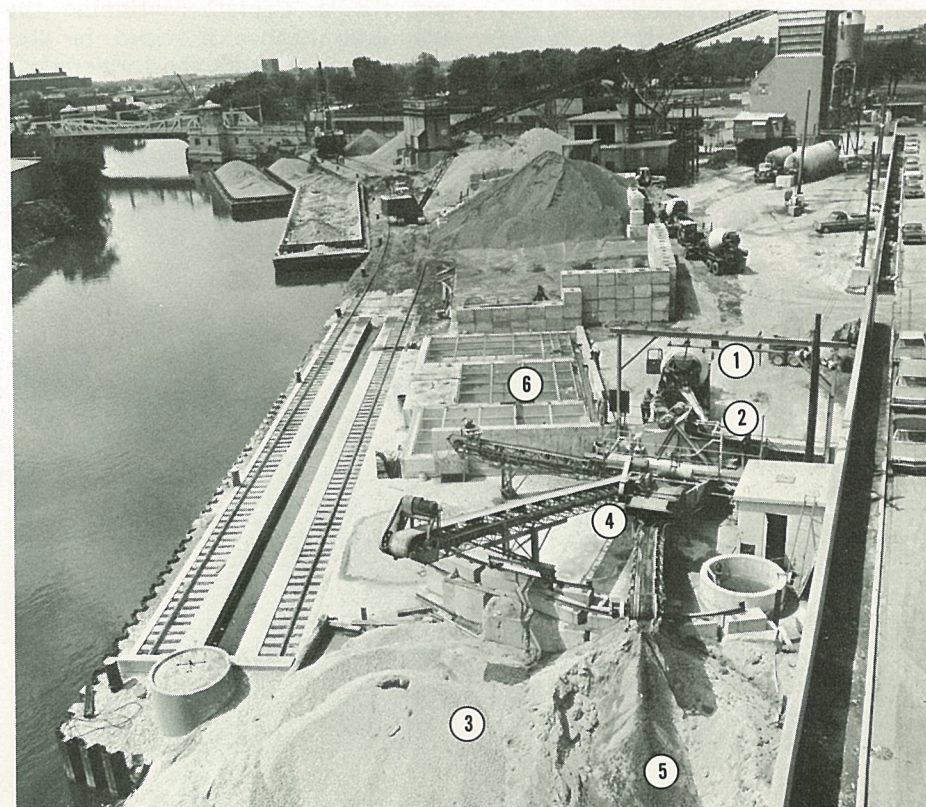
It works this way: the truck discharges mixer residue onto a shaker screen where it is separated into coarse and fine aggregates. The coarse aggregate is washed and de-

posited by conveyor onto a stockpile and the fine aggregate and cement enter a screw classifier where they are separated.

Sand is washed and carried by conveyor onto another stockpile and the cement and water mixture flows to settling basins where the cement is precipitated. The water is treated to meet city specifications for cleanliness.

Good as new, the sand and gravel can now be re-used. The precipitated cement is periodically removed from the settling basins, loaded onto barges and taken away to be used as a landfill.

Similar installations are planned for other company yards.



RECYCLING SYSTEM — Aerial of Material Service's Yard No. 3 shows recycling sequence: (1) Mixer discharges residue onto shaker screen (2) where it is separated and deposited onto stockpile (3); screw classifier (4) separates aggregate for storage (5); cement is precipitated in settling basins (6). Precipitated cement is later used as landfill.



★ SPECIAL ISSUE ★

EFFECTIVE CITIZENSHIP PROGRAM

General Dynamics World

Vol. 1, No. 10

GENERAL DYNAMICS CORPORATION — ST. LOUIS

4178

September 22, 1972

GENERAL DYNAMICS CORPORATION

Pierre LaCade Center
St. Louis, Missouri 63105

19 September 1972

314-862-2440

David S. Lewis
Chairman and Chief Executive Officer

Dear Fellow Employees,

General Dynamics has joined a growing list of American firms that have established programs to encourage their employees to become personally involved in the electoral process. We believe that it is vitally important that every citizen participate in an active way so that the men and women elected to office will be truly representative of all of the people. This is the one reason for the establishment of our Effective Citizenship Program.

It is predicted that of the 140 million people of voting age in our country, only 106 million will register as voters and only 85 million will go to the polls on November 7. Were these proportions to apply to employees of General Dynamics, 15,000 would not register and 24,000 would not vote.

With the lowering of the voting age to 18 and with the relaxation of residency requirements for voter registration that resulted from a recent U.S. Supreme Court decision, virtually all of us at General Dynamics are eligible to vote in the upcoming general election.

We encourage you to register as voters. We encourage you to study the issues and evaluate the candidates. We encourage you to volunteer your time and your money in support of the candidates and parties of your choice. And we encourage you to cast your ballots.

By doing these four things, each of us can become a more effective citizen. This is the goal of our program.

Sincerely,

D.S. Lewis
David S. Lewis

New Program

Political Involvement Urged for Employees

General Dynamics launched a four-part Effective Citizenship Program Sept. 19 to encourage its employees to participate voluntarily in the American political process. Employees are being urged to register as voters, to inform themselves about political issues and candidates, to support parties and candidates of their choice with time and money, and to cast ballots on election day.

Target of the program is the apathy evidenced by an alarming number of citizens toward the process by which a free people govern themselves. It is predicted that 55 million eligible citizens will fail to vote on Nov. 7.

The General Dynamics program is similar to the programs established by a growing number of firms and has been endorsed by both of America's major political parties.

Company officials, in announcing the program, emphasized its voluntary nature and the fact that the company will have no knowledge as to whom participating employees direct their financial support.

Employees who elect to contribute to parties and candidates may do so through a payroll deduction plan administered by an independent firm. All that the company will be told is how much to deduct from the employee's paychecks.

Phase I of the program concerns voter registration. Wherever possible,

the voter registration program will bring the registrars and election officials to General Dynamics plants. Facilities will be provided for employees who have not registered to do so during the lunch period and at shift changes.

Details of the voter registration program will vary from facility to facility since voter registration is a state function and each state has its own rules and procedures.

Where state regulations permit, General Dynamics employees will be encouraged to volunteer as deputy registrars. Where this is not possible, registrars will be invited to come to the plants.

In those cases where on-site registration is not permitted, employees will be provided required forms and information as to location and office hours of registration stations.

Partisan political activities will be welcomed at General Dynamics plants during the course of the Effective Citizenship Program.

The program administrator at each facility will allow every political party listed on the ballot in that state to designate a party coordinator for that facility.

Bulletin boards will be provided on an equal basis for these party coordinators to post political information; tables will be provided for campaign literature that can be picked up by employees during the lunch period or at shift change; tables will be provided where employees who wish to volunteer as campaign workers may sign requests for party officials or candidates to contact them.

Where appropriate, platform space will be provided so that candidates or their supporters can make speeches or hold rallies before and after work and during the lunch period.

General Dynamics, like numerous other firms, responded to requests of the major political parties and made a voluntary contribution plan part of the Effective Citizenship Program.

The company will, at the request of

Voluntary Program

Participation Up to You Alone

It's up to you whether you participate in General Dynamics' Effective Citizenship program.

Your company urges you to participate in all four phases of the program — to register as a voter, to inform yourself about issues and evaluate candidates, to contribute your time and money in support of the party and candidates of your choice and to cast your ballot on Nov. 7.

General Dynamics believes it is your responsibility as a citizen to participate in the electoral process. And, just as much as it believes participation is your responsibility, General Dynamics believes that your politics are your business.

- The Effective Citizenship pro-

gram does not seek to influence how your ballot is cast. It seeks to influence you to cast it.

- The program does not seek to influence your decision as to whom you will support as a volunteer campaign

worker. It seeks to influence you to volunteer.

- The program does not seek to influence your decision as to whom your financial support goes. It seeks to influence you to contribute.

Let us not be unmindful that liberty is power, that the nation blessed with the largest portion of liberty must in proportion to its numbers be the most powerful nation upon earth.

Our Constitution professedly rests upon the good sense and attachment of the people. This basis, weak as it may appear, has not yet been found to fail.

Always vote for a principle, though you vote alone, and you may cherish the sweet reflection that your vote is never lost.

America, in the assembly of nations, has uniformly spoken among them the language of equal liberty, equal justice, and equal rights. (John Quincy Adams, 1821)

(Continued on Page 4)

Your Vote Is Needed On Nov. 7

If American voters in 1972 exercise their right to cast ballots to the extent they did in 1968, only 61 percent of them will go to the polls on November 7.

That means that of the 140 million who could have voted only 85 million will do so. Fifty-five million people will have turned their backs on the No. 1 responsibility of citizens of this Republic — to choose those who will govern them.

With few exceptions, all Americans who vote will first have to register as voters. Only in North Dakota and in some sparsely settled communities in a few other states is it not necessary to register. It is easier to register this year in some states — Texans, for example, need only to mail a coupon clipped from the newspaper to the county clerk — and the U. S. Supreme Court ruled in March that state laws requiring a long period of residency as a condition for voting are unconstitutional. The court said that registration of voters must continue until the election is near.

Nevertheless, it is predicted that of the 140 million eligible citizens, only 106 million will bother to register. This means that of the 55 million who won't vote, 34 million will have excluded themselves from the electoral process by failure to register.

Few companies have employees more widely dispersed throughout the United States than General Dynamics. Employees of our company reside in 48 of the states plus the District of Columbia. Only Alaska and Vermont list no General Dynamics employees among their residents.

With the voting age lowered to 18 for federal elections and with the Supreme Court ruling extending the deadline for registration, virtually all employees of General Dynamics will be eligible to vote in November.

But if our employees exercise this right to the extent predicted for Americans in general, about 24,000 will fail to vote and about 15,000 of these will surrender the right to do so by failing to register.

The 1960 presidential election was decided by a margin of only 118,574 votes. Should the 1972 election be as close and should 24,000 of our employees fail to vote, they could account for as much as 20 percent of the difference between candidates.

Elections, of course, are not always decided by margins as slim as in 1960. Just four years later, for example, the winner enjoyed a margin of nearly 16 million. It is not possible, however, to say what the margin would have been had the millions of Americans who did not vote gone to the polls. More than enough people failed to vote to have given the winner twice the margin he received or to have turned defeat into victory for the loser.

One company that for several years has conducted a program similar to General Dynamics' new Effective Citizenship Program conducted a survey recently and found that 92 percent of its employees eligible to vote had done so. At General Dynamics, our goal is 100 percent of our employees casting ballots. It is, after all, your country.



**IT'S YOUR COUNTRY . . .
SO GET INVOLVED!**

Similar Programs Are Well Received In Other Companies

How effective are programs like the one undertaken by General Dynamics?

Two measures are the number of employees who vote and the amount of money contributed by employees to candidates and parties.

One company that has sponsored a similar program for several years surveyed its employees after the 1972 primary election and found that 98 percent had voted.

Another company reported in early September that its employees contributed a total of \$32,432 via payroll deductions this year. This company has approximately 14,000 employees and 4,700 of them participated in the contribution portion of its political involvement program.

Their contributions were divided nearly equally between the two major parties. A total of 59 candidates were named as recipients of contributions.

Both of these companies made it convenient for their employees to meet their responsibilities as citizens in this election year and the employees responded. General Dynamics believes its employees will respond in like numbers.

November 7, 1972, will go down in history as the day the 38th President of the United States was elected. Historically significant political events have occurred on November 7 in other years. On November 7, 1848, the first election day was uniformly observed throughout the United States. On November 7, 1874, the elephant was first used as a symbol of the Republican Party in a cartoon published in *Harper's Weekly*.

Campaigns Cost Money

Why Should You Contribute?

Like it or not, the lifeblood of political campaigning is money.

Money, in the television age, for advertising; money, in the jet age, for travel; money, in this complex modern age, for staff and office expenses, for research, for polling, for buttons and banners and bumper stickers.

In 1952, the total cost of campaigns for all elective offices in the United States was \$140 million, according to estimates by the Citizens' Research Foundation of Princeton, N.J. The foundation, considered the most comprehensive source of campaign cost figures, said those totals rose to \$155 million in 1956, \$175 million in 1960, \$200 million in 1964, \$300 million in 1968. The projection for 1972 is \$400 million.

Every bit of that sum must come from contributions by citizens to the party and candidates of their choice.

The citizen who is concerned about improving the quality of government, about helping the best candidates to win, and about assuring the integrity of America's electoral process can contribute in many ways.

He can give his free time and labor to the service of a candidate; he can register, and vote, and urge his family and friends to do likewise; he can familiarize himself with the vital issues and thus make valid judgment on how to cast his ballot on election day. But nothing he does can overshadow the importance of putting his money where his vote is — in the form of financial contributions to the party or candidate he favors.

In his book, *Money in Politics*, Herbert E. Alexander, director of the Citizens' Research Foundation, noted how present-day needs have sharply increased Presidential campaign costs:

"Chartered campaign jets require not only flight crews but radio and telephone operators to keep in touch with headquarters. Replete with equipment like duplicating machines, they are in effect jet offices. Every speech, every activity requires planning by the candidate, his campaign manager, his headquarters, advisers, advance men, research team, speech writers, publicity men, communications specialists, clean-up men . . ."

Where, then, does the money come from? From whom *should* it come?

Leaders of both major political parties acknowledge that the vast bulk of campaign money has come from too few contributors, individually able and willing to provide relatively large sums of money but confining the financial taproot to a narrow base that is unhealthy in a democratic society. Both parties have been striving over recent years to broaden that base through solicitation of small contributions by wage-earners whose collective resources can offer a strong, healthy source of financial support for candidates and parties at all levels — local, state and federal.

To stimulate this effort, Congress in 1971 enacted a tax-incentive provision effective this year which allows a deduction on campaign contributions of up to \$50 for a single taxpayer and \$100 for married taxpayers filing jointly or a tax credit of \$12.50 for an individual or \$25 for a married couple.

A number of business corporations — General Dynamics included — are also trying to help widen the base of political participation by providing a means for their employees to set aside campaign contributions through a payroll checkoff system and to designate the recipients of these funds.

The chairmen of both the Republican and Democratic parties, early this year, urged General Dynamics and other major corporations to assist in "broadening the base of political finance."



FINAL PLANNING SESSION—Effective Citizenship Program coordinators from General Dynamics divisions and operations met Sept. 12 at the corporate office in St. Louis for a final review of the program plan before launching it Sept. 19. George Troutman, overall coordinator for the program, presided.

SPECIAL EDITION

General Dynamics World

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Democratic and Republican

Party Chairmen Endorse Company Plan

DEMOCRATIC NATIONAL COMMITTEE

2600 Virginia Avenue, N.W. Washington, D. C. 20037 (202) 333-8750

JEAN M. WESTWOOD
Chairman

September 14, 1972

To the employees of General Dynamics:

Congratulations on the formation of your Effective Citizenship Program. Your participation in it, both by personal effort and financial contribution, will aid immeasurably toward a more enduring America.

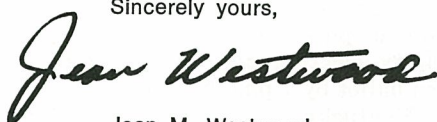
It is of paramount importance to our democratic form of government that all of our citizens be well informed on the issues confronting us, that they participate in the political process, that they contribute and vote. As Americans, we should support our parties with the same sense of responsibility that we feel for our educational and charitable institutions.

This is particularly true when we consider the tremendous cost of political campaigns. Your contribution can help create a broader base of political support that can be our best single assurance of effective, honest leadership.

We salute you for your interest, your concern and your action. Your Effective Citizenship Program can be a most decisive way of keeping our political system strong, financially stable and truly representative of the best interests of all our citizens.

We hope the success of your program will inspire many other companies to make a similar endeavor.

Sincerely yours,


Jean M. Westwood
Chairman

Republican National Committee.

Bob Dole, Chairman

September 14, 1972

To the employees of General Dynamics:

The enduring greatness of our nation and the quality of life in our community depends on all of us fulfilling our civic responsibilities. It depends on our being aware of our nation's problems and opportunities and on our participation in and contributions to the political process.

The Effective Citizenship Program you have begun should go a long way toward developing that interest throughout your company and in the communities where you live. Your desire to become informed on the issues and familiar with your candidates is basic to the continued growth of our republic. The diversified support your campaign can build is mandatory if our government is to be truly representative of all our people.

Your monetary contributions, in particular, can help broaden the financial support your parties and your candidates must have if they are to communicate effectively with all of our citizens. And your personal efforts and participation in the elective process can set an example for all citizens and do much to further the cause of good government.

We wish you every success for your campaign and hope that many other companies will undertake similar programs.

Sincerely,



Robert J. Dole

Dwight D. Eisenhower Republican Center: 310 First Street Southeast, Washington, D.C. 20003. (202) 484-6500.

CHAIRMEN COMMEND PROGRAM—Chairmen of the Democratic National Committee and the Republican National Committee expressed their appreciation for the Effective Citizenship Program in these letters to General Dynamics employees. Each national committee chairman earlier this year ap-

pealed to leading American companies to establish such programs and urged in particular that employees be encouraged to make political contributions. Parties and candidates depend upon contributions to conduct the campaigns that put issues and office seekers before the public.

Information on Card Required by Federal Campaign Act

| CITIZEN | | JOHN | | P. | CITIZEN | | JOHN | | P. |
|--|--|---------------|--|--------------------|---|--|--------------------|--|---------|
| Last Name | | First | | Initial | Last Name | | First | | Initial |
| 1000 OAK ST., PLANT CITY, U.S.A. | | 838-9483 | | | Dept. No. 851 | | Employee No. 01975 | | |
| <input type="checkbox"/> Salaried <input checked="" type="checkbox"/> Hourly | | Dept. No. 851 | | Employee No. 01975 | Occupation (Job Title) ASSEMBLER | | | | |
| USE THIS CARD TO MAKE A VOLUNTARY POLITICAL CONTRIBUTION TO YOUR CANDIDATE OR PARTY I request that my voluntary contribution of \$10.00 be paid after closing of the 1972 Effective Citizenship Program Campaign on October 20, 1972 to: | | | | | | | | | |
| COMPLETE EITHER BOX BUT NOT BOTH | | | | | | | | | |
| CANDIDATE Print name of candidate of your choice _____ Party _____ Office _____ State _____ | | | | | YOU CAN GIVE FROM \$1.00 UP BY PAYROLL DEDUCTION I hereby request General Dynamics or its subsidiary to deduct a total of \$10.00 from my pay and pay it to the Effective Citizenship Program for disbursement as shown on the attached card. | | | | |
| PARTY DEMOCRATIC: <input type="checkbox"/> National <input type="checkbox"/> State REPUBLICAN: <input checked="" type="checkbox"/> National <input type="checkbox"/> State (Check only one box) | | | | | Or Other _____ Print name _____ | | | | |
| Signature <u>John P. Citizen</u> Date <u>Sept. 20, 1972</u> | | | | | Signature <u>John P. Citizen</u> Date <u>Sept. 20, 1972</u> | | | | |
| USE SEPARATE CARD FOR EACH CONTRIBUTION | | | | | SEE OTHER SIDE FOR INSTRUCTIONS | | | | |

HERE'S HOW—This is the card that must be filled out by employees choosing to participate in the contribution portion of the Effective Citizenship Program. In following this example, please print legibly and provide all the information asked for. The left-hand portion of the card

is designed to meet requirements of the Federal Election Campaign Act of 1971. General Dynamics will not receive this portion of the card. The right-hand portion will go to payroll departments as your instruction as to how much to deduct from each paycheck.

The left-hand portion of the paycheck deduction card is designed to meet the requirements of the Federal Election Campaign Act of 1971. This act placed many new requirements on political candidates and parties and, indirectly, on persons who contribute money to them.

The act requires that candidates and parties keep records showing amount of contribution and name, address, occupation and place of business of each person who contributes more than \$10 to them. The same information must be reported to the Controller General for presidential elections and to the Clerk of the House of Representatives or the Secretary of the Senate for congressional elections when a contribution exceeds \$100.

In order for candidates and parties to meet these requirements, the employee participating in the contribution portion of the Effective Citizenship Program must provide the information.

General Dynamics, however, will never see the left-hand portion of the deduction card. The payroll department at your division or operation will receive the right-hand portion only.

Answers to Common Questions

WHAT IS THE EFFECTIVE CITIZENSHIP PROGRAM?

It is an easy way to meet your responsibilities as a citizen in an election year.

IS IT VOLUNTARY?

Absolutely.

WHY SHOULD I CONTRIBUTE MONEY?

It's your government. You want it to represent your interests. You believe your party and your candidates can best do that. They will have a better chance to win if they have enough money to campaign. Your contribution will help.

HOW MUCH SHOULD I GIVE?

The decision is yours alone. The national average is \$1 for each \$1,000 of gross annual earnings. Remember that general elections are two years apart and that if you give \$10 that amounts to less than 42 cents a month until the next election. Is good government worth that much to you?

WILL GENERAL DYNAMICS KNOW TO WHOM I GIVE?

Absolutely not. The company will know the amount you wish to contribute but not to whom you are contributing.

ARE CONTRIBUTIONS DEDUCTIBLE FOR TAX PURPOSES?

Yes. You may deduct from your federal income tax up to \$50 if you are a single person or you and your wife may deduct \$100 if you file a joint tax return. Alternatively, a tax credit of \$12.50 may be taken by a single person and \$25 by a couple filing jointly.

HOW LONG WILL DEDUCTIONS CONTINUE?

The last deduction will be made from the last paycheck you receive by Oct. 20, 1972.



Exception For Texans

Because of a Texas statute, General Dynamics employees there may designate federal candidates only for contributions via paycheck deduction. Contributions to candidates for state or local office in Texas must be made direct to them.

This restriction does not apply to employees who reside in other states or the District of Columbia.

Traveling Nov. 7? Cast Absentee Ballot

Being away from home on election day doesn't mean you will be unable to vote.

If you know that you will be away from home on Nov. 7, you can obtain an absentee ballot and, providing you return it by the deadline established for your state, your vote will be tabulated just as if you had gone to the polls on Nov. 7.

In one state — Arizona — voters do not even have to be away from home to make use of the absentee ballot. Arizona residents older than 65 or residing more than 15 miles from the polling place may use the absentee ballot.

The absentee ballot also may prove useful if you move to a new state or new political subdivision of your state between Oct. 8 and Nov. 7.

The U. S. Supreme Court upheld in March a federal law providing that state residence requirements exceeding 30 days cannot be enforced with respect to national elections.

One provision of this law states that if an individual moves to a new state or political subdivision within a state less than 30 days prior to a national election he may vote where he resided previously and that he may do so in person or by absentee ballot.

A note to persons who frequently travel on short notice: Obtain an absentee ballot and if you suddenly find you will be away from home on

Nov. 7 you will still be able to vote.

Following are the rules for obtaining and casting absentee ballots in the District of Columbia and the 48 states in which General Dynamics employees reside:

Alabama
Obtain ballot in person or by mail from the county registrar between Sept. 23 and Nov. 2. Return ballot by 7 p.m. Nov. 7.

Arizona
Obtain ballot in person or by mail from the county recorder after Oct. 8. Date and time for returning ballot varies by county.

Arkansas
Obtain ballot in person or by mail from the county clerk by Oct. 8. Return ballot by 7:30 p.m. Nov. 7.

California
Obtain ballot in person or by mail from either the voter registrar or the county clerk between Oct. 9 and Oct. 31. Return ballot by 5 p.m. Nov. 6.

Colorado
Obtain ballot in person or by mail from the county clerk by Nov. 3. Return ballot by 5 p.m. Nov. 7.

Connecticut
Obtain ballot in person or by mail from the town clerk from Sept. 22 to Nov. 6. Return ballot by 6 p.m. Nov. 6.

Delaware
Obtain ballot in person or by mail from the County Elections Depart-

ment between Oct. 6 and Nov. 6. Return ballot by midnight Nov. 6.

District of Columbia
Obtain ballot in person or by mail from the Board of Elections from Oct. 23. Return ballot by 8 p.m. Nov. 7.

Florida
Obtain ballot in person or by mail from the county election supervisor between Sept. 23 and Nov. 7. Return ballot by 7 p.m. Nov. 7.

Georgia
Obtain ballot in person or by mail from the County Board of Registrars by Nov. 1. Return ballot by 7 p.m. Nov. 7.

Hawaii
Obtain ballot in person or by mail from the county clerk by Nov. 2. Return ballot by 4:30 p.m. Nov. 6.

Idaho
Obtain ballot in person, by mail or by telephone from the county clerk by Nov. 6. Return ballot by 8 p.m. Nov. 7.

Illinois
Obtain ballot in person or by mail from the county clerk (in Chicago from election commissioners) between Oct. 9 and Nov. 2. Return ballot by Nov. 7.

Indiana
Obtain ballot in person or by mail from the clerk of County Circuit Court between Oct. 8 and Nov. 4. Return ballot by Nov. 7.

Iowa
Obtain ballot from the city or town clerk. By mail from Sept. 28. In person from Oct. 23. Return ballot by Nov. 6.

Kansas
Obtain ballot in person or by mail from the county election officer by Nov. 6. Return ballot by 7 p.m. Nov. 7.

Kentucky
Obtain ballot in person, by mail or by telephone from the County Court clerk from Oct. 13. Return ballot by Nov. 7.

Louisiana
Obtain ballot from the parish clerk of court except in Orleans Parish. Obtain there from civil sheriff. In person from Oct. 19 to Nov. 1. By mail now to Nov. 7. Return by 8 p.m. Nov. 7.

Maine
Obtain ballot in person or by mail from town, city or plantation clerk by Nov. 7. Return ballot by 3 p.m. Nov. 7.

Maryland
Obtain ballot in person or by mail from the Board of Supervisors of Elections by Oct. 31. Return ballot by 8 p.m. Nov. 7.

Massachusetts
Obtain ballot in person or by mail from the city clerk, town clerk or election commissioner by noon Nov. 6. Return ballot by 8 p.m. Nov. 7.

Michigan
Obtain ballot from the municipal clerk. In person on Nov. 6 before 2 p.m. By mail Sept. 26 to Nov. 4. Return ballot by 8 p.m. Nov. 7.

Minnesota
Obtain ballot in person or by mail from the county auditor from Sept. 23 to Nov. 6. Return ballot before 8 p.m. Nov. 7.

Mississippi
Obtain ballot in person or by mail from the city or county registrar from Oct. 7. Return ballot by 6 p.m. Nov. 7.

Missouri
Obtain ballot from the county clerk or the Board of Commissioners. In person from Oct. 8 until 4 p.m. Nov. 6. By mail from Oct. 8 until 4 p.m. Nov. 3. Return ballot by 4 p.m. Nov. 6.

Montana
Obtain ballot in person or by mail from the county clerk and recorder from Sept. 23 to Nov. 6. Return ballot by 8 p.m. Nov. 7.

Nebraska
Obtain ballot in person or by mail from Oct. 3 to Nov. 4. In Lancaster, Douglas and Sarpy Counties from election commissioner. In other counties from county clerk. Return ballot by 8 p.m. Nov. 7.

Nevada
Obtain ballot in person or by mail from the county clerk by 5 p.m. Oct. 31. Return ballot by 6 p.m. Nov. 7.

New Hampshire
Obtain ballot from the town clerk or the city clerk. In person by 11 a.m.

Nov. 7. By mail by noon Nov. 7. Return ballot by noon Nov. 7.

New Jersey
Obtain ballot by mail from the county clerk by Oct. 30. Return by 8 p.m. Nov. 7.

New Mexico
Obtain ballot from the county clerk. By mail from within U. S. until Oct. 28. By mail from outside U. S. until Oct. 10. In person until Nov. 2. Return ballot by 7 p.m. Nov. 7.

New York
Obtain ballot in person or by mail from County Board of Elections from Oct. 9 to Oct. 31. Return ballot by noon Nov. 6.

North Carolina
Obtain ballot by mail only from the chairman of the County Board of Elections from Sept. 23 to Nov. 1. Return ballot by noon Nov. 4.

North Dakota
Obtain ballot in person or by mail from the county auditor until Nov. 7. Return ballot by 8 p.m. Nov. 7.

Ohio
Obtain ballot from the director of the County Board of Elections. Applications from outside U. S. now until 4 p.m. Nov. 2. Applications from within U. S. Oct. 8 until 4 p.m. Nov. 2. Return ballot by 6:30 p.m. Nov. 7.

Oklahoma
Obtain ballot from the County Election Board by mail only from Oct. 6 to Nov. 3. Return ballot by 5 p.m. Nov. 3.

Oregon
Obtain ballot by mail or in person from the county clerk until Nov. 7. Return ballot by 8 p.m. Nov. 7.

Pennsylvania
Obtain ballot by mail or in person from the County Board of Elections from Sept. 18 to Oct. 31. Return ballot by 5 p.m. Nov. 3.

Rhode Island
Obtain ballot from the local Board of Canvassers in person or by mail by Oct. 17. Return ballot by 9 p.m. Nov. 7.

South Carolina
Obtain ballot in person or by mail from the County Board of Registration by Nov. 7. Return ballot by 7 p.m. Nov. 7.

South Dakota
Obtain ballot in person or by mail from the county auditor before Sept. 18. Return ballot by 7 p.m. Nov. 7.

Tennessee
Obtain ballot from the county election commissioner. By mail from Sept. 28 to Oct. 30. In person from Oct. 18 to Nov. 2. In most counties, the vote must be cast in person. Ballot must be returned by 10 p.m. Nov. 7.

Texas
Obtain ballot from the county clerk in person or by mail until Nov. 3. Return ballot in person by Nov. 3. Return by mail before 1 p.m. Nov. 7.

Utah
Obtain ballot in person or by mail from the county clerk from Oct. 9 to Nov. 7. Ballot returned by mail must be postmarked by noon Nov. 7 and received by noon on the day votes are canvassed. Ballot returned in person is due by 8 p.m. Nov. 7.

Virginia
Obtain ballot from the county or city general registrar. In person Sept. 28 to Nov. 4. By mail Sept. 28 to Nov. 2. Return ballot by 7 p.m. Nov. 7.

Washington State
Obtain ballot in person or by mail from the county auditor, city clerk or town clerk after Oct. 1. Ballot returned in person is due by 8 p.m. Nov. 7. Ballot returned by mail must be postmarked by Nov. 7.

West Virginia
Obtain ballot from the circuit clerk. In person Oct. 9 to Nov. 3. By mail Oct. 23 to Nov. 4. Return ballot by 7:30 p.m. Nov. 4.

Wisconsin
Obtain ballot from the municipal clerk. In person until 5 p.m. Nov. 6. By mail until 5 p.m. Nov. 3. Return ballot by 8 p.m. Nov. 7.

Wyoming
Obtain ballot from the county clerk in person or by mail after Sept. 28. Get further details from the county clerk.

Court Agrees New Residents Can Vote in Federal Elections

The U. S. Supreme Court in a decision in March upheld provisions of a federal law that state residence requirements exceeding 30 days cannot be enforced with respect to national elections.

This means that if you have moved recently or will be moving before October 8 you have not lost the right to vote Nov. 7 for candidates for President, Vice President and Congress.

A number of states, following the federal lead, have amended residence requirements for voting in state and local elections to make them conform to the rules for national elections. Your local election officials can advise you on rules in your state.

The federal law as upheld by the Supreme Court provides that:

— A qualified voter who establishes residence in a new state or political subdivision of a state at least 30 days before a national election and who ap-

plies for registration by that time is eligible to vote there for candidates for national office. If the state's registration deadline falls more than 30 days prior to the election, the new resident must still be permitted to register to vote up until the 30th day before the election.

— If an individual moves to a new state or political subdivision of a state and is unable to register in his new residence because the time of his move falls less than 30 days prior to the election, the place in which he formerly resided must permit him to vote in a national election. In such cases, he may vote in person at his old residence or he may vote by absentee ballot in the election unit of his old residence.

(Elsewhere on this page you will find rules for absentee voting in all of the states in which General Dynamics employees reside.)

Please note that the emphasis is upon voter registration. Do not fail to register because you have moved or plan to move. Register in your new residence if you move there before October 8. Register in your present residence if you will move between October 8 and November 7.

Share Citizenship Program Interest With Your Family

Don't forget your family during the course of the Effective Citizenship Program.

Your wife or husband almost certainly is a qualified voter. Lowering the voting age to 18 increased the chances that you have a son or daughter living at home who is qualified to vote. So take your interest in the political processes home with you.

The voting and registration literature you take from tables at work can be taken home and shared. So can the campaign literature. Make political involvement a family affair this election year.

Encourage members of your family to register as voters, to inform themselves about political issues and evaluate candidates, to volunteer as campaign workers, to contribute to parties and candidates, and to accompany you to the polls on Nov. 7.

Employees Urged to Join New Company Citizenship Program

(Continued from Page 1)

an employee, deduct a specified amount from each paycheck he receives by Oct. 20.

The employee participating in this portion of the program will fill out a card and mail it to the independent firm administering the contributions program.

The independent firm will advise the payroll department at the facility where the employee works to deduct the amount specified by the employee. The payroll department will not, however, be told to whom the contribution will be made.

After the deductions are made, the independent firm will direct the payments to the designated recipients from a special bank account.

At the end of the withholding period, payment to the recipients will be made as designated by the employee.

Recipients will advise contributors of receipt of the money.

At no time will General Dynamics know to whom an individual employee makes contributions.